	Application No.	**Applicant(s)**	
Notice of Allowability	09/638,082	DEAN ET AL.	
	Examiner	**Art Unit**	
	William L. Bashore	2176	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Request For Reconsideration filed 7/3/2007*.

2. ☒ The allowed claim(s) is/are *1-3, 5, 7, 10-14, 16-18, 20-24, 26-32 (renumbered as per Issue Classification Sheet)*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

       3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

       1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *attached* .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

WILLIAM BASHORE
PRIMARY EXAMINER

July 21, 2007

EXAMINER'S AMENDMENT

a.   An examiner's amendment to the record appears below. Should the changes and/or additions be

unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of

such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John Harrity on

July 19, 2007.

b.   The application has been amended as follows: please replace all pending claims with the following

(including new claims 27-32):

1.   (currently amended) A computer implemented method of crawling hyperlinked documents,

comprising:

sending a request for additional links to hyperlinked documents to a link manager;

receiving a plurality of links to hyperlinked documents to be crawled, the plurality of links

being selected by the link manager based on priority;

grouping the plurality of links to hyperlinked documents by host;

grouping hosts into buckets according to a number of hyperlinked documents to be crawled at

each host;

sorting the hosts in each bucket based on a stall time of each host;

selecting a host from one of the buckets to crawl next according to the stall time of the host;

[[and]]

crawling a hyperlinked document from the selected host;

      determining a retrieval time for crawling the hyperlinked document from the selected host; and

      adjusting a subsequent stall time for the selected host according to the retrieval time.

2.   (original) The method of claim 1, wherein the stall time of the host is the earliest time in which a hyperlinked document from the host should be crawled.

3.   (currently amended) The method of claim 1, wherein selecting a host to crawl next includes selecting a host with a stall time that is earlier than [[the]] a current time.

4.   (canceled)

5.   (currently amended) The method of claim 1, further comprising examining the buckets in descending order of the number of hyperlinked documents to be crawled at each host until a host is found with a stall time that is earlier than [[the]] a current time.

6.   (canceled)

7.   (previously presented) The method of claim 1, further comprising moving the selected host to a bucket with less hyperlinked documents to be crawled.

8.   (canceled)

9.   (canceled)

10.   (currently amended) A computer-readable ~~memory~~ storage device including a plurality of instructions that, when executed by at least one processor, causes a method to be performed, the method comprising:

~~computer code that requests~~ requesting links from a link manager;

~~computer code that receives~~ receiving a plurality of links to hyperlinked documents to be crawled from the link manager, the plurality of links being selected by the link manager based on priority;

~~computer code that groups~~ grouping the plurality of links to hyperlinked documents by host;

~~computer code that groups~~ grouping hosts into buckets according to a number of hyperlinked documents to be crawled at each host;

~~computer code that selects a host from one of the buckets to crawl next according to a stall time of the host~~ sorting the hosts in each bucket based on a stall time of each host;

~~computer code that selects~~ selecting a host from one of the buckets to crawl next according to [[a]] the stall time of the host; [[and]]

~~computer code that crawls~~ crawling a hyperlinked document from the selected host;

determining a retrieval time for crawling the hyperlinked document from the selected host; and

adjusting a subsequent stall time for the selected host according to the retrieval time.

11.   (currently amended) The computer-readable ~~memory~~ storage device of claim 10, wherein the computer-readable ~~memory~~ storage device includes a CD-ROM, floppy disk, tape, flash memory, system memory, or hard drive.

12.   (previously presented) A computer implemented method of crawling hyperlinked documents, comprising:

sending a request for links to hyperlinked documents to a device;

receiving a plurality of links to hyperlinked documents to be crawled from the device, the plurality of links being selected by the device based on priority;

grouping the plurality of links to hyperlinked documents by host;

grouping hosts into buckets according to a number of hyperlinked documents to be crawled at each host;

selecting a host from one of the buckets to crawl next according to a stall time of the host;

crawling a hyperlinked document from the selected host;

determining a retrieval time for retrieving the hyperlinked document from the selected host; and

adjusting subsequent stall times for the selected host according to the retrieval time.

13.   (original) The method of claim 12, wherein the stall time of the host is the earliest time in which a hyperlinked document from the host should be crawled.

14.   (currently amended) The method of claim 12, wherein selecting a host to crawl next includes selecting a host with a stall time that is earlier than [[the]] a current time.

15.   (canceled)

16.   (currently amended) The method of claim 12, further comprising examining the groups in descending order of the number of hyperlinked documents to be crawled at each host until a host is found with a stall time that is earlier than [[the]] a current time.

17.   (previously presented) The method of claim 12, wherein the hosts within each group are sorted by stall time.

18.   (previously presented) The method of claim 12, further comprising moving the selected host to a group with less hyperlinked documents to be crawled.

19.   (canceled)

20.   (currently amended) A computer-readable ~~memory~~ storage device including a plurality of instructions that, when executed by at least one processor, causes a method to be performed, the method comprising:

        ~~computer code that sends~~ sending a request for links to hyperlinked documents to a device;

        ~~computer code that receives~~ receiving a plurality of links to hyperlinked documents to be crawled from the device, the plurality of links being selected by the device based on priority;

        ~~computer code that groups~~ grouping the plurality of links to hyperlinked documents by host;

        ~~computer code that groups~~ grouping hosts into buckets according to a number of hyperlinked documents to be crawled at each host;

        ~~computer code that selects~~ selecting a host from one of the buckets to crawl next according to a stall time of the host;

        ~~computer code that crawls~~ crawling a hyperlinked document from the selected host; ~~including~~

        determining a retrieval time for ~~retrieving~~ crawling the hyperlinked document from the selected host; and

        ~~computer code that adjusts~~ adjusting a subsequent stall ~~times~~ time for the selected host according to the retrieval time.

21.   (currently amended) The computer-readable ~~memory~~ storage device of claim 20, wherein the computer-readable ~~memory~~ storage device includes a CD-ROM, floppy disk, tape, flash memory, system memory, or hard drive.

22.   (currently amended) A computer implemented method of crawling hyperlinked documents, comprising:

storing a plurality of links to hyperlinked documents to be crawled;

determining that more links to hyperlinked documents are desired;

sending requests to multiple link managers for more links to hyperlinked documents;

receiving additional links to hyperlinked documents from the link managers;

selecting a host to crawl next according to a stall time of the host; [[and]]

crawling a hyperlinked document from the selected host;

determining a retrieval time for crawling the hyperlinked document from the selected host; and

adjusting a subsequent stall time for the selected host according to the retrieval time.

23.   (currently amended) A computer-readable ~~memory~~ storage device including a plurality of instructions that, when executed by at least one processor, causes a method to be performed, the method comprising:

~~computer code that stores~~ storing a plurality of links to hyperlinked documents to be crawled;

~~computer code that determines~~ determining that more links to hyperlinked documents are desired;

~~computer code that sends~~ sending requests to multiple link managers for more links to hyperlinked documents;

~~computer code that receives~~ receiving additional links to hyperlinked documents from the link managers;

~~computer code that selects~~ <u>selecting</u> a host to crawl next according to a stall time of the host;

[[and]]

~~computer code that crawls~~ <u>crawling</u> a hyperlinked document from the selected host<u>;</u>

<u>determining a retrieval time for crawling the hyperlinked document from the selected host; and</u>

<u>adjusting a subsequent stall time for the selected host according to the retrieval time.</u>

24.   (currently amended) The computer-readable ~~memory~~ <u>storage</u> device of claim 23, wherein the computer-readable ~~memory~~ <u>storage</u> device includes a CD-ROM, floppy disk, tape, flash memory, system memory, or hard drive.

25.   (canceled)

26.   (currently amended) A computer-implemented method ~~for crawling hyperlinked documents,~~ comprising:

grouping links to hyperlinked documents by host, each host being associated with a stall time;

grouping hosts into buckets according to a number of hyperlinked documents to be crawled at each host;

sorting the hosts in each bucket based on the stall time of each host;

identifying a host to crawl by examining the buckets in descending order based on the number of hyperlinked documents to be crawled at each host until a host is found with a stall time that is earlier than a current time; [[and]]

crawling a hyperlinked document from the identified host<u>;</u>

<u>determining a retrieval time for crawling the hyperlinked document from the identified host;</u> <u>and</u>

<u>adjusting a subsequent stall time for the identified host according to the retrieval time.</u>

27.   (new) The computer-readable storage device of claim 10 wherein selecting a host from one of the buckets to crawl next includes:

selecting a host with a stall time that is earlier than a current time.

28.   (new) The computer-readable storage device of claim 10 wherein selecting a host from one of the buckets to crawl next includes:

examining the buckets in descending order of the number of hyperlinked documents to be crawled at each host until a host is found with a stall time that is earlier than a current time.

29.   (new) The computer-readable storage device of claim 10 wherein the method further comprises:

moving the selected host to a bucket with less hyperlinked documents to be crawled after crawling the hyperlinked document from the selected host.

30.   (new) The computer-readable storage device of claim 20 wherein selecting a host from one of the buckets to crawl next includes:

selecting a host with a stall time that is earlier than a current time.

31.   (new) The computer-readable storage device of claim 20 wherein selecting a host from one of the buckets to crawl next includes:

examining the buckets in descending order of the number of hyperlinked documents to be crawled at each host until a host is found with a stall time that is earlier than a current time.
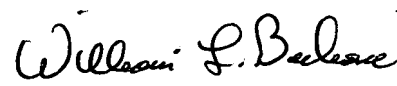
32.   (new) The computer-readable storage device of claim 20 wherein the method further

comprises:

moving the selected host to a bucket with less hyperlinked documents to be crawled after

crawling the hyperlinked document from the selected host.

c.   Any inquiry concerning this communication or earlier communications from the examiner should be

directed to William L. Bashore whose telephone number is (571) 272-4088. The examiner can normally be

reached on 9:00 am - 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug

Hutton can be reached on (571) 272-4137. The fax phone number for the organization where this application or

proceeding is assigned is 571-273-8300.

d.   Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained from

either Private PAIR or Public PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-

9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the

automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WILLIAM BASHORE
PRIMARY EXAMINER

July 21, 2007